

CLAIMS:

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is:

1 1. A method for dynamically controlling speed of a scroll device  
2 providing scroll functions for setting time of a time keeping  
3 display having minute and hour indicators, said scroll device  
4 generating scroll signals and communicating said signals to a  
5 control device for advancing said minute and hour indicators in  
6 response thereto, said method comprising:

7 a) receiving first scroll signals from said scroll device  
8 and, in response to received first scroll signals, incrementally  
9 advancing a time keeping display minute indicator in a first  
10 direction according to fine-grain time increments, and  
11 simultaneously tracking the advancing direction;

12 b) determining a predetermined number of said fine-grain  
13 time increments in said first direction; and,

14 c) thereafter, in response to continued receipt of first  
15 scroll signals, seamlessly advancing said time keeping display  
16 minute indicator according to coarse-grain time increments in  
17 said first direction, said coarse-grain time increments greater  
18 than said fine-grain time increments, whereby fewer scroll device  
19 manipulations are required to achieve a desired time set without  
20 notice to the user.

1 2. The method as claimed in Claim 1, further comprising the  
2 steps of:

3 d) receiving second scroll signals in response to  
4 manipulating said scroll device to change direction of said time  
5 keeping display minute indicator;

6 e) determining said change in direction; and,

24  
con 7 f) incrementally advancing said time keeping display  
8 minute indicator in said changed direction according to fine-  
9 grain time increments.

Sub  
1 3. The method as claimed in Claim 1, wherein said scroll device  
2 generates scroll events in response to manipulation thereof, said  
3 generated scroll signals corresponding to said scroll events,  
4 wherein said fine-grain time increments of said display minute  
5 indicator corresponds to one (1) minute increment per scroll  
6 event.

1 4. The method as claimed in Claim 3, wherein said coarse-grain  
2 time increments of said display minute indicator corresponds to  
3 five (5) minutes increments per scroll event.

5  
6 5. The method as claimed in Claim 4, wherein said step c) of  
7 providing coarse-grain time increments includes incrementally  
8 advancing said display minute indicator a pre-determined number  
9 of time increments per one or more scroll events and increasing  
said pre-determined number for each subsequent one or more scroll  
events.

1 6. The method as claimed in Claim 5, further comprising the  
2 steps of:

3 receiving second scroll signals in response to manipulating  
4 said scroll device to change direction of said time keeping  
5 display minute indicator;

6 determining said change in direction; and,

7 incrementally advancing said time keeping display minute  
8 indicator in said changed direction according to fine-grain time  
9 increments, and simultaneously tracking said advancing direction.

1 7. The method as claimed in Claim 1, further including the step  
2 of implementing said scroll device for incrementing advancing a  
3 time keeping display hour indicator in a first direction  
4 according to received first scroll signals, and simultaneously  
5 tracking said advancing direction.

1 8. The method as claimed in Claim 7, further comprising the  
2 steps of:

3 receiving second scroll signals in response to manipulating  
4 said scroll device to change direction of said time keeping  
5 display hour indicator;

6 determining said change in direction; and,

7 incrementally advancing said time keeping display hour  
8 indicator in said changed direction according to fine-grain time  
9 increments, and simultaneously tracking said advancing direction.

10 9. The method as claimed in Claim 7, wherein said scroll device  
11 further generates click events in response to manipulation  
12 thereof, and generates third scroll signals corresponding to said  
13 click events for communication to said control device, said  
14 method further comprising the step of: independently enabling  
15 scroll device control of either said time keeping display minute  
16 indicator or said time keeping display hour indicator upon  
17 receipt of a third scroll signal.

18 10. A system for dynamically controlling scrolling functions for  
19 a display indicator capable of navigating through a high-  
20 resolution display provided in a wearable appliance that displays  
21 textual or graphical content, said system comprising:

22 a scroll device for manipulation by a user to provide said  
23 scrolling functions for advancing said indicator, said scroll  
24 device generating scroll events; and,

8 a control device for receiving said scroll events, tracking  
 9 an advancing direction of said indicator, and providing dynamic  
 10 speed control of said indicator by advancing said indicator  
 11 according to fine-grain and coarse-grain increments in response  
 12 to said scroll events and said tracked direction, wherein said  
 13 dynamic speed control is seamless to the user.

1 11. The system as claimed in Claim 10, wherein said control  
 2 device comprises a mechanism for determining a predetermined  
 3 number of said fine-grain increments, whereby upon continued  
 4 manipulation of said scroll device, after determination of a  
 5 predetermined number of said fine-grain increments, said control  
 6 device enabling coarse-grain advancement of said display  
 7 indicator per scroll event in said first direction to thereby  
 8 advance to a desired display position with fewer scroll device  
 9 manipulations.

1 12. The system as claimed in Claim 11, wherein said appliance  
 2 provides time keeping functions, said indicator including a time  
 3 keeping display minute and hour indicators for a time keeping  
 4 function, whereby, said control device enables incremental fine-  
 5 grain advancement of said time keeping display minute indicator  
 6 per scroll event in a first direction, and, upon continued  
 7 manipulation of said scroll device, after determination of a  
 8 predetermined number of said fine-grain increments, enables  
 9 coarse-grain advancement of said time keeping display minute  
 10 indicator per scroll event in said first direction to thereby  
 11 achieve a desired time set with fewer scroll device  
 12 manipulations.

1 13. The system as claimed in Claim 11, whereupon determination  
 2 of user manipulation of said scroll device to effect a change in  
 3 advancing direction of said indicator, said control device

4 enables incremental fine-grain advancement of said indicator per  
5 scroll event in said changed direction.

1 14. The system as claimed in Claim 11, wherein said scroll  
2 device is a roller wheel.

1 15. The system as claimed in Claim 11, wherein said scroll  
2 device is a mouse wheel.

1 16. A program storage device readable by a machine, tangibly  
2 embodying a program of instructions executable by the machine to  
3 perform method steps for dynamically controlling scrolling  
4 functions for a display indicator capable of navigating through a  
5 display provided in a wearable appliance that displays textual or  
6 graphical content, said appliance implementing a scroll device  
7 for generating scroll events in response to user manipulation  
8 thereof, said method steps including the steps of:

9 a) receiving scroll events for incrementally advancing  
10 said indicator per scroll event in a first direction to provide  
11 fine-grain scroll indicator movement, and simultaneously tracking  
12 the advancing direction;

13 b) determining a predetermined number of said fine-grain  
14 indicator increments in said first direction; and,

15 c) thereafter, in response to continued receipt of scroll  
16 events, providing in a manner that is seamless to a user, coarse-  
17 grain scroll indicator movement by advancing said indicator for a  
18 pre-determined number of increments per scroll event in said  
19 first direction, said coarse-grain scroll indicator movement  
20 greater than said fine-grain scroll indicator movement, whereby  
21 fewer scroll device manipulations are required to achieve a  
22 desired scroll indicator position on said display.

1 17. The program storage device readable by a machine as claimed  
2 in Claim 16, further comprising the steps of:

3 d) receiving scroll events in response to manipulating  
4 said scroll device to change direction of said indicator  
5 movement;

6 e) determining said change in direction; and,

7 f) incrementally advancing said indicator per received  
8 scroll event in said changed direction to provide fine-grain  
9 scroll indicator movement.

1 18. The program storage device readable by a machine as claimed  
2 in Claim 17, wherein said appliance provides time keeping  
3 functions, said indicator including a time keeping display minute  
4 and hour indicators for a time keeping function.

5 19. Method for dynamically controlling scrolling functions for a  
6 display indicator capable of navigating through a display  
7 provided in a wearable appliance that displays textual or  
8 graphical content, said appliance implementing a scroll device  
9 for generating scroll events in response to user manipulation  
10 thereof, said method comprising the steps of:

11 a) receiving scroll events for incrementally advancing said  
12 indicator per scroll event in a first direction to provide fine-  
13 grain scroll indicator movement, and simultaneously tracking the  
14 advancing direction;

15 b) determining a predetermined number of said fine-grain  
16 indicator increments in said first direction; and,

17 c) thereafter, in response to continued receipt of scroll  
18 events, providing in a manner that is seamless to a user, coarse-  
19 grain scroll indicator movement by advancing said indicator for a  
20 pre-determined number of increments per scroll event in said  
21 first direction, said coarse-grain scroll indicator movement  
22 greater than said fine-grain scroll indicator movement, whereby

19 fewer scroll device manipulations are required to achieve a  
20 desired scroll indicator position on said display.

1 20. The method as claimed in Claim 19, further comprising the  
2 steps of:

3 d) receiving scroll events in response to manipulating  
4 said scroll device to change direction of said indicator  
5 movement;

6 e) determining said change in direction; and,

7 f) incrementally advancing said indicator per received  
8 scroll event in said changed direction to provide fine-grain  
9 scroll indicator movement.